1: Washington S-4 (no date) 1956 AF13 Northwest China AF13 •
Sinkiang AI1

/The Chinese/

knowledge of sanitation and elementary health regulations. Their concepts of health and disease rest mainly on the traditional beliefs. The concept that dominates most of their thinking about the human body and its health is that of the Two Principles of yang and yin. These are philosophical concepts of the origin of all things. The yang principle represents the male and the yin represents the female. They stand for opposite poles - heaven and earth, sun and moon, day and night, heat and cold, life and death, positive and negative, strong and weak.

In medicine, everything is classified as yang or yin. The exterior of the body - the skin - is yang, while the interior is yin. The back is yang, while the abdomen is yin. The heart and liver are yang while the spleen, lungs and kidneys are yin. A disease, accordingly, is yang when due to external causes and yin when due to internal causes. Respiratory diseases, fever, and diseases affecting the upper part of the body are yang diseases. Chills and afflictions of the lower body, and circulatory diseases are yin diseases. When the yin predominates, one suffers from yang disease; when the yang is in excess yin results. These two principles must be kept in mind when treating the disease, since the drugs and herbs are also divided into these two classes.

Another Chinese concept concerning health is that of the existence of the Five Elements - metal, wood, water, fire and earth. According to this belief, the human body is composed of a mixture of the five elements. So long as the proportions of these five elements remain in order, health results. If the balance is disturbed, disease follows.

These beliefs are common mainly among the uneducated population, the rural and the lower classes of the urban population. In most cases, the higher classes have a Western knowledge of the basic elements of health and sanitation and know the basic facts of human physiology and the causes of transmission of diseases. Illiteracy and ignorance is much greater in the Northwest region than along the Pacific Coast. Thus, in the Northwest, the beliefs are widespread and most Western ideas have not penetrated into the larger part of the population.

Unfortunately, we do not have figures on the birth and death rate in Northwest China. The figures for all of China are given in the chapter on "Health and Sanitation" of the General China Handbook.

C. Predominant Diseases Among the Chinese

The most common diseases are the fecal-borne ones. They are spread through the use of human waste as fertilizer. Andre Migot, who travelled through Northwest China in 1946, dwells on this problem in his description of a typical middle-sized town in this area (Tibetan Marches, p. 51): "Then there is the problem of sanitation. The total volume of human excrement produced every day

5: Tafel--572 T-3 (1905-1908) 1914 AJ1 Tibet
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seeds of rhubarb in case I found any. 137

In the 13th century, already, Marco Polo reports that rhubarb was gathered in the Koko Nor region and from there sent to the rest of the world. In our time Prschewalski brought back bulbs and seeds as well as dried plants from the Koko Nor on his Tibetan journey in the years 1870-1873, and after that the Koko Nor rhubarb was classified as Rheum palmatum L. var. tanguticum Maximowicz. But in the course of the years the specimens grown from Prschewalski's seeds in the botanical gardens of St. Petersburg, Bern, etc., changed so much and became so similar to our ordinary Rheum palmatum hortorum, moreover, such a large number of new species have been said to be the original plant of the medicinal remedy we use, that the question of its origin still seems unsolved.

Thus, I was very pleased to be able to send Professor Tschirch an envelope containing rhubarb seeds which I had myself gathered in the woods between the rocks near Dulan gomba (37° northern latitude, 98°, 40' longitude east of Greenwich), and that from these seeds, in defiance of all primitive methods of transportation, young plants came up in the Bern Botanical Garden, a year later and long before I left Tibet, which helped solve the problem conclusively. In the Schweizerische Wochenschrift für Chemie und Pharmazie, 1910, number 19, Professor Tschirch reports that from the seeds I sent him Rheum palmatum L. var. β-tanguticum Maxim. developed, in fact, that this species is so different from Rheum palmatum, that he feels inclined to classify it as a different species, as Rheum tanguticum.

Rheum palmatum is confined to Northeast Tibet, to the highlands of the Nan Shan and Koko Nor, whereas the very different Rheum officinale occurs in the more moist south and southeast of the Tibetan mountains. Hand in hand with the variety of species and climate goes the /342/ method of treatment of the bulbs once they are dug out. In Szechwan and South Tibet the root must often be artificially dried in ovens because the summers are too wet. In the north, at Koko Nor, the people who gather rhubarb take the greatest care to dry the bulbs in 278 ● 324

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the air and even without sun. The Koko Nor rhubarb is bought up by the merchants from the neighboring province of Shensi. For this reason it gets into the hands of Europeans mostly under the name of Shensi- (pronounced: Shansi-) rhubarb. There is also Szechwan, Shanghai-, and Canton-rhubarb, all drug-names which have been introduced by European export firms on the coast or on the Russian border.

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/342/ Dankar and Hsining (1) as well as Suchow are the places

1. At the time of my journey Hsining exported 1,000 and 1,200 picul.

where the merchants from the Chinese lowland, the "Shensi- and Canton guests," take the medicinal plant from the rhubarb-gatherers of the Koko Nor in November and December. These merchants are almost exclusively Kansu Mohammedans who set out in groups of 30 to 40, under the leadership of a master. In this way 400 to 500 men journey annually from the valleys of the Hsining prefecture in order to hunt for rhubarb. These leaders are small, independent employers who take the risk of a journey into dangerous Tibet. They pay their men two to three taels a month with free maintenance. In order to be assured in advance of a certain price for their goods and not be subject to too much subsequent speculation, the merchants of the lowland usually bear the cost of the equipment and the rather expensive licenses which may be bought from the amban yamen and also from the individual native chieftains. All my Mohammedan servants had already been in the Ts'ao ti digging for rhubarb. The chief harvest time is September when the small fruit is ripe. Then the rhizomes are less juicy. Of ten pounds of freshly-dug roots, about seven pounds remain after they are dried. In July, on the other hand, they are so spongy that only three pounds remain out of ten pounds, and the efficacious ingredients are not present in such large amounts as in the fall. In the winter and as long as the plant has no leaves, the rhizome is considered "empty."

The gatherers dig out the rhubarb very carelessly. They pull all the larger stalks, those that are more than five or six years old, out of the earth and drag them along with roots attached to the camp sites. There the ring-shaped stricture where the plant part goes over into the rhizome is cut; then the rhizomes are peeled, all the hair

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roots are cut off with a knife, as well as all the old leaves, everything that is, as the people say, "black." Thereupon the clean, wet pieces of root a few inches long are pierced with an awl and strung up on strings to dry in the air. Careful drying is of the utmost importance for the quality and the price. The bulbs may never be exposed to the sun. Thus, they are carefully hung up between the branches of cedar trees (there are no houses or roofs in this region) and where there are gaps in the branches these are filled in with twigs. If the sun dries the roots they are said to become black and the Chinese buyers will not take them or only at much lower prices. The buyers at the Dankar market cut them open in order to see whether they have any black spots. /343/ (1) Only pieces that are yellowish-

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1. See in this connection: A Tschirch: "Studien über den Rhabarber und seine Stammpflanze" in Festschrift für Professor Ritter, Vienna 1904, and the report based on my personal observation: A. Tschirch, Arch. d. Pharm., 1907, p. 680 and Schweiz. Wochenschr. f. Chemie und Pharm. 1910, no. 12, "Zwei interessante Pflanzen des Berner Botan. Gartens," with a good illustration of Rheum tanguticum which was grown from the seed I gathered at the border of Tsaidam (near Dulan gomba). - Further, see C.C. Hosseus, Osterr. botan. Zeitschr. 1911, no. 12, "Die Stammpflanze des offiziellen Rhabarbers"; Arch. d. Pharm. 1911. p. 419, "Rheum palm., die Stammpflanze," Südd. Apoth.-Ztg. p. 239.

The pieces, which are peeled on the spot, are examined in Dankar and cleaned again, then packed in boxes which are sealed with oiled paper. All the exporters of medicinal rhubarb in Shanghai say that it is extremely hygroscopic. It must be very carefully handled in the moist coastal climate. There it is often re-dried in order to keep it from getting moldy, but then it often loses its quality. The so-called Muscovite rhubarb which comes over the Russian-Mongolian border and via Kiakhta travels through a drier climate and is therefore justifiably considered better, aside from the fact that it derives from North Tibet, that is, from the Rheum palmatum which contains 2.8 to 4 percent oxymethylanthrachinonen.

red all the way through bring a good price in Dankar. Twelve to

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278 fourteen taels were paid in 1894 for 100 catties. At the beginning
437 of this century the price in Dankar dropped to 8 to 9 taels. The rhubarb from Kue de brings 1 to 2 taels less because its rhizomes are blacker and are therefore considered less efficacious.

824 The Mongols and Tibetans use this rhubarb only for dyes, not for
386 medicinal purposes. On the other hand, they use the stems of
262 another kind which the Mohammedans call sche hoang, that is, stone-rhubarb, with leaves that are only slightly slit, as a vegetable.

On July 10 I left the Schang yurts. I had set Barun-Tsaidam as
600 my next goal, in order to supplement my supply of flour, which I had not succeeded in doing in Schang. In Barun there is supposed to be more barley than in Schang.

We had some difficulty in getting started. The small animals had not got used to each other. The 37 head which I bought always tried to stray apart and head for any larger herd. It was a mystery to me how my men with unfailing accuracy always extricated my animals from a flock of many hundreds of sheep and goats. But the Chinese are good at things like that. It always amuses me to recall an example illustrative of this distinguishing trait. It happened at an inn in the lowlands. A guest and, of course, a grass widower had just returned home from market carrying his supper consisting of meat, eggs and flour, and the necessary fuel for it under his arm. He threw the bundle of twigs down in front of the door of his room. While he was in the room in order to fetch his cooking pot and pan, a policeman who was keeping the all-too troublesome gapers away from me, hoping to earn a good tip, got himself a stick from the bundle of faggots of my neighbor and paraded up and down with it at some distance in front of the gate of the inn. The grass widower returned. He took up his bundle and immediately discovered the damage. A mere glance, and he recognized his property in the hands of the policeman. Now, there was a second policeman with a similar stick in his hand, standing at the gate, but the injured man had immediately picked out the right one and also got back what belonged to him. The lies and excuses of the policeman were powerless against his plausible arguments. He was able to give a minute description of his firewood.

We traveled over low hills and a small saddle: at the end of our
133 day's march we crossed over the Yogh'ore gol, the outlet of the Tossun Nor and the Alang Nor. The Yogh'ore Valley is wide and flat-bottomed, the river is /344/ divided into several branches and was now, at the time of the monsoon rains, rather deep. I had